

CLAIMS

I claim:

1. Process for the on-line storage of sets (2) of flat products (1) such as, in particular, disposable liners or sanitary napkins, in which said products are transported between one or more input stations (3) and one or more output stations (4) and in which:

- said sets are introduced at a given arrival rate at said input station or stations (3) between pressing means (6), capable of moving with said sets, said pressing means (6) being in a first, so-called open, configuration,

- said products are pressed against one another by causing said pressing means (6) to change over from their open configuration to a second, so-called product holding, configuration,

- said sets are directed towards said output station or stations (4) at which they are ejected, at a given output rate, adapted as a function of the input rate, to manage an accumulation of sets between said input station or stations (3) and said output station or stations (4).

2. Process according to claim 1, in which said pressing means (6) are caused to travel in a loop by directing them, after the ejection of the sets, from said output station or stations (4) to said input station or stations (3), and said pressing means (6) are caused to pass from their product holding configuration to their open configuration.

3. Process according to claims 1 or 2, in which said sets are caused to travel between said input station or stations (3) and said output station or stations (4) along a path the length of which is variable as a function of the input and/or output rate, to manage said accumulation.

4. Process according to any one of claims 1 to 3, in which there is provided a stream of sets of variable size and said holding configuration is adapted according to the size of the sets to be conveyed.

5. Device for the on-line storage of sets of flat products such as, in particular, disposable liners or periodic napkins, including one or more input stations (3) and one or more output stations (4), as well as means (8) for conveying said sets between said input station or stations (3) and said output station or stations (4), said device further including :

- pressing means (6), capable of moving with said set conveying means (8), said pressing means (6) being capable of changing over from a first, so-called open, configuration, permitting the introduction of the sets into said conveying means (8) at a given input rate, to a second, or so-called product holding configuration, in which the products are pressed against one another,

- means (10) or causing said pressing means (6) to change over from their open configuration to their product holding configuration, provided at said input station or stations,

- means (7) for ejecting the sets, provided at said output station or stations for the departure of the sets at a given output rate,

- means (9) for generating an accumulation of the sets between the input station or stations (3) and the output station or stations (4), as a function of the input and/or output rate.

6. Device according to claim 5, in which said conveying means (8) take a looped path, said device including means for causing said pressing means (6) to change over from their product holding configuration to their open configuration, provided, in the direction of progress of the conveying means, between said output station or stations (4) and/or said input station or stations (3) and/or in the area thereof.

7. Device according to claim 6, in which said means for causing said pressing means (6) to change over from their product holding configuration to their open configuration are provided in the area of said output station or stations (4).

8. Device according to claim 5, in which :

- said conveying means (8) include a plurality of pods (11), each said pod (11) being capable of accommodating at least one said set,

- said pressing means (6) are constituted by two carriages (15) sliding in the same, so-called clamping, direction (17), on said pod (11) and by means (16) for holding said carriages spaced apart by a given distance.

9. Device according to claim 8, in which said means (16) for holding the carriages (15) are constituted by first and second blocking means (22a, 22b) capable of engaging with one another, the first blocking means (22a) being secured to said carriage (15) and said second blocking means (22b) being articulated in relation to said car (11), as well as by locking means (23), borne by the pod (11), said locking means (23) being capable of forcing the engagement of said second blocking means (22b) with said first blocking means (22a).

10. Device according to claim 9, in which said means (10) for causing said pressing means (6) to change over from their open configuration to their product holding configuration are constituted:

- by at least a first jack (30), secured to an armature (31) fixed in relation to which the pods (11) travel, said first jack or jacks (30) being capable of acting upon said locking means (23) to disengage said first and second blocking means (22a, 22b) and leave them free in relation to one another,

- second jacks (32) secured to said fixed armature (31), said second jacks (32) being capable of causing said carriages (15) to slide in said clamping direction (17) between said open configuration and said product holding configuration.

11. Device according to claim 10, including means (36) for adapting said product holding configuration.

12. Device according to claim 11, in which said means (36) for adapting the product holding configuration are constituted by stops (37), mobile in relation to said fixed armature (31), said stops (37) being capable of limiting the travel of said second jacks (32) so as to adjust the minimum spacing of said carriages (15).

13. Device according to claim 5, in which said ejection means (7) include a thrust bearing (44) and means for displacing said stop in a first direction (45), the latter means being constituted by means (46) capable of generating a force in a second direction (47), substantially perpendicular to said first direction (45) and by means (48) for transmitting said force, cooperating with said stop (44).

14. Device according to claim 13, in which said transmission means (48) are constituted by two arms (49), forming the two equal sides of an isosceles triangle (50) the axis of symmetry of which is defined by said first direction (45), and by means for bringing together / separating said arms (49) by deforming said triangle (50) while preserving its characteristics as an isosceles triangle and the orientation of its axis of symmetry.

15. Device according to claim 14, in which said arms (49) have ends (51) cooperating with one another, in the area of said thrust bearing (44), the opposite ends (52) of said arms (49) being mounted so as to be articulated on skids (53) sliding on a rail (54) substantially perpendicular to the axis of symmetry of said isosceles triangle.

16. Device according to claim 15, in which said means (46) for generating a force are constituted by at least one jack (55) driving, directly or indirectly, said skids (54).

17. Device according to claim 16, in which said means (9) for managing an accumulation of sets are constituted by means for varying the length of the path taken by said transport means (8).

• 18. Device according to claim 17, in which said conveying means (8) include at least one belt (12) forming a loop of a fixed length and in which said means for varying the length of the path are constituted: :

- by a first pair of so-called driving drums (56a, 56b), serving to drive said belt (12),

- by means for actuating said driving drums (56a, 56b) capable of operating them at two respective separate speeds,

- by a second pair of drums (58a, 58b) about which the belt (12) travels; the first (58a) and the second (58b) drums of said second pair being respectively provided between the first (56a) and the second (56b) driving drums and between the second (56b) and the first (56a) driving drums, according to the direction of travel of said belt (12), said first (58a) and second (58b) drums of said second pair being held at a constant distance from one another and said second pair being mobile in relation to said first pair.